

WHAT IS CLAIMED IS:

1. An electromagnetically controlled drive system for accessing a data storage medium, comprising:

an optical signal generator;

5 a reflector element adapted to receive an optical signal from the optical signal generator and direct the optical signal toward the data storage medium; and

an electromagnetic element adapted to generate an electromagnetic field proximate to the reflector element, the reflector element adapted to respond to the electromagnetic field to move the optical signal relative to the data storage medium in response to a change in the electromagnetic field.

2. The system of Claim 1, wherein the reflector element is disposed spaced apart from the optical signal generator.

15 3. The system of Claim 1, wherein the electromagnetic element comprises at least a plurality of conductive coils adapted to generate the electromagnetic field.

20 4. The system of Claim 1, wherein the reflector element is disposed in movable relation relative to the optical signal generator.

25 5. The system of Claim 1, wherein the electromagnetic element comprises at least a multi-layer printed circuit board with conductive traces formed on at least one layer of the printed circuit board.

6. The system of Claim 1, further comprising a controller coupled to the electromagnetic element and adapted to selectively alter the electromagnetic field to move the reflector element relative to the optical signal generator.

30 7. The system of Claim 1, further comprising a support system configured to movably suspend the reflector element relative to the data storage medium.

8. The system of Claim 7, wherein the support system comprises a plurality of springs coupled to the reflector element.

5 9. A method for accessing a data storage medium, comprising:
directing an optical signal toward the data storage medium via a reflector element; and

generating an electromagnetic field proximate to the reflector element, the reflector element adapted to respond to the electromagnetic field to move the optical
10 signal relative to the data storage medium in response to a change in the electromagnetic field.

10. The method of Claim 9, wherein generating the electromagnetic field comprises generating a current through a conductive coil of an electromagnetic
15 element, the electromagnetic element disposed in a spaced apart relationship relative to the reflector element.

11. The method of Claim 9, further comprising generating the optical
20 signal via an optical signal generator, the reflector element disposed spaced apart from the optical signal generator and adapted to receive the optical signal from the optical signal generator.

12. The method of Claim 9, wherein generating the electromagnetic field
25 comprises selectively generating a current through at least one of a plurality of conductive coils of the electromagnetic element.

13. The method of Claim 9, wherein generating the optical signal comprises generating the optical signal via an optical signal generator, the reflector element disposed in movable relation relative to the optical signal generator and adapted to receive the optical signal from the optical signal generator.

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14. The method of Claim 9, further comprising movably suspending the reflector element relative to the data storage medium, the reflector element configured to direct the optical signal toward the data storage medium.

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15. The method of Claim 9, wherein generating the electromagnetic field comprises selectively generating a current through at least one of a plurality of conductive traces formed on a printed circuit board.

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16. An electromagnetically-controlled drive system for accessing a data storage medium, comprising:

an optical signal generator;

a reflector element disposed in movable relation relative to the data storage medium and the optical signal generator, the reflector element adapted to receive an optical signal from the optical signal generator and direct the optical signal toward the data storage medium; and

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an electromagnetic element configured to generate an electromagnetic field proximate to the reflector element, the reflector element adapted to move relative to the data storage medium and the optical signal generator in response to a change in the electromagnetic field.

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17. The system of Claim 16, wherein the electromagnetic element comprises a plurality of conductive coils configured to generate the electromagnetic field.

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18. The system of Claim 16, wherein the electromagnetic element comprises a plurality of conductive traces formed on a printed circuit board configured to generate the electromagnetic field.

19. The system of Claim 16, further comprising a support system configured to movably suspend the reflector element relative to the data storage medium.

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20. The system of Claim 19, wherein the reflector element comprises a magnet.

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